HPH

Public Health

HPH 500: Contemporary Issues in Public Health
This course provides an introduction to the field of public health that aims to develop an appreciation of the unique and important mission of public health; an understanding of the history, values, ethics, mission, and goals of public health; and knowledge about how public health functions today including the organization, financing, policies, and practices of public health. Students will be expected to think critically about whether public health has achieved its mission in today's world and how the profession might develop in the future. Prerequisite: Admission to Graduate Public Health Program or Department Consent. 3 credits, Letter graded (A, A-, B+, etc.)

HPH 506: Biostatistics I
This is the first of a sequence of two-semester courses with the aim to provide students and researchers in public health with an introduction to the principles of public health informatics and statistical methods with their application in biomedical and public health research. The course will provide necessary knowledge and skills to perform various data management tasks to create and manage data sets using SAS with basic proficiency. The course will also introduce summarizing and exploring data, probability theory, discrete and continuous probability distributions, populations and samples, sampling distributions and statistical inference, hypothesis testing, one-sample and two-sample comparisons. 3 credits, Letter graded (A, A-, B+, etc.)

HPH 507: Biostatistics II
"This is the second of the two-semester courses intended to provide students and researchers in public health with an introduction to the principles of public health informatics and statistical methods and their application in biomedical and public health research. The course will provide necessary knowledge and skills to perform various data management tasks to create and manage data sets using SAS with intermediate proficiency. The course builds upon the foundations of its prerequisite, Biostatistics I, with progressively more advanced instruction in analysis of variance, association and correlation, linear regression, and logistic regression. Prerequisite: HPH 506
3 credits, Letter graded (A, A-, B+, etc.)

HPH 508: Health Systems Performance
This course introduces students to the system that we have developed to deliver health care in the United States, with international comparisons. The topics include the organization and financing of health care systems, access to health care including health insurance, regulation and policy issues, and the health care workforce. Prerequisite: Admission to Graduate Public Health Program or Department Consent
3 credits, Letter graded (A, A-, B+, etc.)

HPH 509: Independent Study
This course is designed to provide the fundamentals of environmental and occupational health and to educate students on issues related to major environmental and occupational concerns. It will provide a forum for the discussion of local and national environmental and occupational public health issues. The content of the course will focus on major pollutants, their detection, impact on health, and principles of remediation. Using various teaching techniques, students will be exposed to current environmental and occupational topics and approaches to prevention and treatment. The course will emphasize the most recent research in the field. Prerequisite: Admission to Graduate Public Health Program or Department Consent
3 credits, Letter graded (A, A-, B+, etc.)

HPH 510: Infectious Disease Epidemiology
This course is an introduction to the characteristics of infectious disease and dynamics of transmission. Major goals of the course are for students to understand the theoretical basis of pathogen transmission; to identify factors that determine patterns of disease spread within populations; and to identify populations at risk. The course will demonstrate how an understanding of epidemiological characteristics facilitates disease prevention and control, with broader implications for public health. 3 credits, Letter graded (A, A-, B+, etc.)

HPH 514: Epidemiology for Public Health
This course presents basic epidemiologic concepts used to study health and disease in populations. It provides an overview of the major causes of morbidity and mortality, including methods of measurement (e.g., incidence, prevalence). Observational and experimental epidemiologic studies will be described and their advantages and disadvantages compared. The course aims for students to begin developing the skills needed to evaluate data, interpret reports, design, and conduct studies. Students will be introduced to the various areas of epidemiologic studies, including cancer, molecular/genetic, environmental, occupational, social and behavioral, and infectious disease surveillance. The course comprises both lectures and small group seminars for in-depth discussions of previously assigned topics. Prerequisites: Admission to Graduate Public Health Program or Department Consent; HPH 506.
3 credits, Letter graded (A, A-, B+, etc.)

HPH 516: Environmental and Occupational Health
This course introduces students to the system that we have developed to deliver health care in the United States, with international comparisons. The topics include the organization and financing of health care systems, access to health care including health insurance, regulation and policy issues, and the health care workforce. Prerequisite: Admission to Graduate Public Health Program or Department Consent
3 credits, Letter graded (A, A-, B+, etc.)

HPH 519: Independent Study
Intensive reading, under supervision of one or more instructors, of material not covered in the formal curriculum, or execution of a research project under the supervision of one or more faculty members. Permission of MPH Academic Coordinator is required. Prerequisite: Admission to Graduate Public Health Program or Department Consent
0-6 credits, Letter graded (A, A-, B+, etc.) May be repeated 5 times FOR credit.

HPH 521: Introduction to Clinical Research
This introductory seminar series provides a broad-based overview of clinical science research methods, as well as guidance for critically reviewing the peer-reviewed literature. Class lectures, exercises, and interactive small group sessions will cover framing a research question, formulating a...
research hypothesis, critically appraising the literature, exploring study design options, conducting research ethically and responsibly, selecting clinical outcomes, and evaluating analytical alternatives. Students enrolled in the Master of Public Health degree program can not use this course (earn credit) to their degree requirements.

1 credit, Letter graded (A, A-, B+, etc.)
May be repeated 3 times FOR credit.

HPH 522: Race, Racism, and Health
This course introduces students to race and racism as a determinants of health. We explore the historical notions of race, how race impacts health, and how racism impacts the health of different populations. Also covered is how race and discrimination are measured, critical race theory and public health interventions to address racial disparities. Some background in statistics and research methods is required in order to fully understand the course material.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 523: Social and Behavioral Determinants of Health
This course introduces students to population health as one of the organizing concepts in public health and the orientation that differentiates public health from medicine. Consistent with public health tradition, health is discussed from an ecological perspective, and the course presents current knowledge about the multiple determinants of population health including socioeconomic status, the physical environment, medical care, individual behavior, and genetics and the interaction of these factors. Also covered is the measurement of population health, sources of data and methods for assessing population health improvements. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 525: Evaluating Programs and Policies to Improve Health
This course introduces students to health policy analysis and public health program evaluation, two distinct fields that share similar tools, albeit with different goals in mind and approaches to meet these goals. Specifically, this course (1) draws on economics, epidemiology, political science, and biostatistics to prepare students to conduct holistic analyses of health policy issues; (2) prepares students to plan a program evaluation; and (3) prepares students to evaluate public policy options. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 532: Chronic Diseases: Epi, Etiology and Prevention
This course will cover substantive and methodological issues in the epidemiology of chronic diseases, including cancer, and cardiovascular, chronic respiratory and neurodegenerative diseases. Students will be presented with examples of descriptive and analytical epidemiology studies in each of these areas; aspects such as disease registration and its contribution to epidemiology research, estimates of attributable fractions, and preventive strategies will be also addressed. The course will include considerations about causality for chronic diseases, including issues of validity in epidemiology studies as well as integration of evidence across studies and disciplines.

3 credits, Letter graded (A, A-, B+, etc.)

HPH 534: Spatial Analysis: Health Applications
This course is an intermediate level graduate course in the application of spatial methods for analyzing environmental exposure and disease data. Students with backgrounds in epidemiology, public health, environmental health, biostatistics, community health, biology, sociology, psychology, marine and atmospheric sciences, geosciences, demography, and geography are particularly encouraged to participate. Although the course will focus on examples related to human health, graduate students in other disciplines will find the course useful for specific and appropriately defined research purposes. Techniques for spatially analyzing point patterns and aggregated data in polygons will be introduced, including autocorrelation, clustering analysis, geostatistical smoothing, and approaches for spatial regression. Consideration of space-time variability will also be covered. This course includes theoretical elements so that the student will learn to appreciate strengths and weaknesses of different spatial approaches. Prior course in GIS or equivalent, as determined by consent from the instructor required. Students need a foundational knowledge of Geographic Information Systems (GIS) software. This requirement can be met by completing GSS 313: GIS Design and Application I (if available), by completing other Introduction to GIS courses at Stony Brook or elsewhere, or by self-teaching using the following book: Getting to Know ArcGIS Desktop by Tim Ormsby, Eileen Napoleon, and Robert Burke. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 535: Clinical and Community Preventive Medicine
This course prepares residents to transition from the role of learners to practitioners of preventive medicine. Didactic lectures emphasize clinical preventive medicine, which entails mastering the science of preventive medicine practice, grounded in the evidence-based clinical preventive services guidelines as developed by the United States Preventive Services Task Force (USPSTF) [i.e. screenings, behavioral counseling, and chemoprophylaxis/preventive medications], while case-based simulated sessions provide an opportunity to become skilled in the art of preventive medicine practice, built upon the principles of lifestyle medicine, motivational intervention, brief action planning and other evidence-based strategies for health behavior change. The work of the preventive medicine physician in public health, referred to as community preventive medicine or community medicine, is also covered in this course, including the Community Preventive Services (CPSTF) guidelines, to help prepare residents for the medical practice of prevention in the public health domain. The role of the preventive medicine physician in the seamless integration and effective collaboration between clinical medicine and public health is emphasized where appropriate. Prerequisite: Admission to Graduate Public Health Program or Department Consent

3 credits, Letter graded (A, A-, B+, etc.)

HPH 542: Introduction to Global Health
This course will provide an introduction to the field of global health and challenge students to think about how a global perspective could enhance their future practice. The course is designed for MD and MPH students, and is open to students from related graduate programs with instructor permission. This course will explore core concepts in global health, including its definition and origin; how to measure the global burden of disease; recent progress and current challenges; social inequalities in health; health systems; and global stakeholders. It will also apply such concepts to major global health topics, with lectures focused on such areas as HIV/AIDS, child health and immunization, chronic disease epidemiology and sexual violence.

2 credits, S/F graded

HPH 549: Public Health Law
This course is a survey of legal and policy issues that have special relevance for public health professionals. Topics may vary, but typically will include many of the following: structure of the U.S. legal system; power of state governments in matters affecting
health care; governmental power and the
right to privacy; constitutional issues in social
welfare benefits; governmental regulation of
health care providers and payers; the scope
and discretion of administrative agencies in
health care; the antitrust laws; the fraud and
abuse laws; and negligence in the delivery
and financing of health care. Prerequisite:
Admission to Graduate Public Health Program.
3 credits, Letter graded (A, A-, B+, etc.)

**HPH 550: Theories of Health Behavior
and Communication**

In this survey theory course, students learn
about the major health behavior and health
communication theories that are used in
population health research and practice. Rather
than simply cataloguing each theory in turn,
this course takes a constant, comparative,
approach to the learning of theories, in which
theories are dissected to their core elements
and compared to each other in order to
understand the points of convergence and
divergence among them. The goal in
taking this comparative approach is application: by
knowing the core elements of various theories,
students will more easily be able to choose
appropriate theories to explain population
health problems of interest and consider the
design of interventions that are appropriate
to achieve improvements in the educational,
behavioral and environmental factors that
may contribute to the problem. In addition to
covering traditional individual-level behavior
change and health communication theories,
this course will focus on social change and
systems theories, challenging students to think
about the role of social context and systems
on health behavior and health communication
to achieve population health improvements.
Finally, after learning about commonly-used
theories in the field of public health, students
will learn about and critique theories that are
less-commonly used (such as new and
emerging theories in the literature) and have
important implications for future research,
practice, and further theory development
and testing among populations. Prerequisite:
Admission to Graduate Public Health Program
or Department Consent
3 credits, Letter graded (A, A-, B+, etc.)

**HPH 551: Practice of Health
Communications**

This course provides an overview of health
communication. The course will introduce
theories concerning health communication, and
build on such to provide practical approaches
to interpersonal and organizational health
communication, risk communication, and
media campaigns. Students will learn to
collect, organize, and convey information
effectively to different audiences important
to public health initiatives. Throughout,
the course will emphasize how health
literacy and cultural beliefs influence
effective communication, and students will
be challenged to develop communication
tools (e.g., social marketing campaigns,
presentations, op-eds) optimized for a
specific population. Prerequisite: Admission
to Graduate Public Health Program or
Department Consent
3 credits, Letter graded (A, A-, B+, etc.)

**HPH 552: Planning and Implementing
Community Health Initiatives**

In this course, students learn how to develop
theoretically-informed and evidence-based
community health initiatives. Over the course
of the semester, students work on developing
their own culturally-competent community
health initiatives, each of which is targeted
at a particular population with a specific
health need. Each student learns how to assess
community needs and assets using a variety
of methods, elaborate an initiative's theory
of change through use of logic model, design
theoretically-informed intervention activities
appropriate to the needs/assets identified,
create a budget and organizational structure,
and engage key stakeholders at every facet
of development and implementation of the
community health initiative. Students work
together in the same small group over the
course of the semester to get/give feedback
and hone their individual projects. Through
this intense group work, students both (1)
learn how to apply course concepts to several
particular community health problems and (2)
 gain skills for working in teams on community
health initiative planning and implementation.
Prerequisite: Admission to Graduate Public
Health Program or Department Consent; HPH
550.
3 credits, Letter graded (A, A-, B+, etc.)

**HPH 553: Advanced Evaluation of
Community Health Initiatives**

This course prepares students to plan,
implement, and evaluate an evaluation of a
community health initiative. Basic principles
and practices of evaluation are addressed,
including identifying the goals of a community
health initiative; designing an evaluation plan
that can determine if the initiative's goals
are achieved; implementing an evaluation
plan; interacting with stakeholders; and using
evaluation results to improve performance.
Prerequisite: Admission to Graduate Public
Health Program or Department Consent; HPH
525
3 credits, Letter graded (A, A-, B+, etc.)

**HPH 554: Principles of Health
Education & Promotion**

This course aims to provide students with
the historical, theoretical, and philosophical
foundations of health education and
promotion. Students will be given the tools to
work with community and patient populations.
Students will be equipped with the knowledge,
skills, and attitudes to raise people's health
awareness, as well as the tools needed
to teach people how to reduce their risk of
disease and promote health. All students will
be required to design a health education and
promotion program using the knowledge
and skills learned in the course. Prerequisite:
Admission to Graduate Public Health Program
or Department Consent
3 credits, Letter graded (A, A-, B+, etc.)

**HPH 555: Global Health and
Demography**

This course introduces students to the basic
theory and methods employed in the study
of demography and global health. This course
will provide an introduction to the field of
global health and challenge students to think
about how a global perspective could impact
their future public health practice. The students
will also learn about sources of demographic
data, patterns in global fertility and mortality,
and the demographic transition. Prerequisite:
Admission to Graduate Public Health Program
or Department Consent
3 credits, Letter graded (A, A-, B+, etc.)

**HPH 559: Advanced Research Methods**

This course will provide students with an in-
depth review of principles of public health
research methods. Emphasis will be placed
on conceptualization of research questions,
evaluation of research design, sample size,
and issues related to potential threats to validity
within a public/applied setting. Additionally,
students will become familiar with how to
evaluate methods used in published literature
and to design their own research projects.
Course topics will include how to obtain
secondary data, sample size calculation, risk
adjustment, bias, confounding, and interaction.
The instructor will work with students as they
develop their own analytic project proposals.
Students will be expected to implement their
proposed research in HPH 560 Advanced
Biostatistics in the following semester.
Prerequisite: Admission to Graduate Public
Health Program or Department Consent; HPH
507 and HPH 501
3 credits, Letter graded (A, A-, B+, etc.)

**HPH 560: Applied Biostatistics**
Students learn to formulate a scientific question in terms of a statistical model, leading to objective and quantitative answers. Topics may include analysis of variance, regression, and implications for study design, measures of association, 2x2 tables, stratification, matched pairs, logistic regression, model building, analysis of rates, and survival data analysis using proportional hazards models. The course stresses applications in epidemiology, and other areas of public health research. Prerequisite: Admission to Graduate Public Health Program or Department Consent; HPH 507 and HPH 559.

3 credits, Letter graded (A, A-, B+, etc.)

**HPH 562: Population Health Analytics**
The Population Health Analytics course provides students with the methodological and analytical skills required for competent evidence-based decision-making regarding population health improvement projects. Beginning with a review of current methods and an introduction to emerging methods for the generation and analysis of health data, such as precision medicine/big data, telemedicine/digital health, and spatial analysis/hotspotting, the course covers the major elements required for the evidence-based pursuit of population health goals. In particular, hands-on training is provided on how to synthesize evidence, via comprehensive systematic review methodologies, in the following 4 aspects of evidence-based decision-making: effectiveness, efficiency, feasibility, and appropriateness/meaningfulness. In addition, students will learn how to retrieve and summarize information about population health from major public health information systems in the U.S. Lectures and labs are aimed at developing hands-on skills for the management and analysis of health data using SPSS and other relevant statistical software programs, such as Open Meta Analyst (OMA) and the System for the Unified Management, Assessment and Review of Information (SUMARI). Prerequisite: Admission to Graduate Public Health Program or Department Consent; HPH 501 and HPH 566.

3 credits, Letter graded (A, A-, B+, etc.)

**HPH 566: Clinical Trials**
This course introduces the design, conduct, and analysis of clinical trials. Topics will include types of clinical trials, study design, treatment allocation, randomization and stratification, quality control, sample size requirements, patient consent, and interpretation of results. 2 credits, Letter graded (A, A-, B+, etc.)

**HPH 575: Public Health Internship**
This course is an applied internship in a public, not-for-profit, or private sector organization that provides a public health service. Students will gain practical public health skills through a semester-long internship. The student will work in the organization and prepare a weekly journal of activities, as well as a paper at the conclusion of the course, applying program knowledge to the internship activities. Graduated and may be repeated for credit. MPH Academic Coordinator consent required. Prerequisite: Admission to Graduate Public Health Program and Department Consent 0-12 credits, Letter graded (A, A-, B+, etc.) May be repeated for credit.

**HPH 581: Capstone**
This course will assist students in synthesizing basic public health knowledge through completion of several competency-driven learning experiences. Most core and concentration course work must be completed before the student can participate in Capstone. Students will be introduced to the process of writing grant proposals and developing budgets, professional networking with non-academic community partners, publishing in the scientific literature; communicating practice-based projects in both oral and poster presentation formats, and planning for their future careers as public health professionals. They will self-assess their own conflict styles and apply negotiation and mediation skills to address community and/or organizational challenges, and reflect on their conflict styles when considering case studies. Students will also engage in inter-professional education learning activities to improve their understanding and communication of their roles, values/ethics, and how to work effectively as part of an inter-professional team. Students will apply systems thinking to a case study to create a logic model that demonstrates the complex systems involved in a population health issue. Lastly, they will present their own work as part of their Practicum to fellow students, and discuss career plans. Permission of MPH Academic Coordinator is required. Prerequisite: Admission to Graduate Public Health Program and Department Consent 3 credits, Letter graded (A, A-, B+, etc.)

**HPH 590: Research Practicum**
The goal of Research Practicum is to mentor students to successfully complete their research requirements. Expectations are that students will register for Research Practicum for three consecutive semesters. The Research Practicum is a planned experience with expectations identified each semester in conjunction with a research mentor and faculty supervisor. A practicum proposal, analysis report, and final deliverable (NIH proposal, Foundation proposal, or peer reviewed publication) are required. 0-9 credits, Letter graded (A, A-, B+, etc.) May be repeated for credit.

**HPH 599: Maintenance of Matriculation**
This course is for students who are maintaining matriculation while engaging in consultation with faculty regarding completion of courses and/or master's project. Students will be graded S/F.
Prerequisite: Admission to Graduate Public Health Program and Department Consent

0-3 credits, S/F graded
May be repeated for credit.